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AUTHOR Greenauer, Michael; Lindauer, Martin S.
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ABSTRACT

Five- to six-year-old children were fairly consistently able to match stick figures and abstract linear configurations representative of positive emotions (peacefulness, happiness, excitement, desire) but could not as consistently pair stick figures and abstract configurations representative of negative emotions (sadness, upset, cruelty, rage). Eighteen children, who were attending an urban day care center, nearly equally representing sex and race, participated in the study. In individual tests, three stimuli at a time were shown: two stick figures representing two different emotions flanked an abstract configuration which had been judged by college students as representing the emotion portrayed by one of the two stick figures. The child's task was to identify the stick figure who could have drawn the abstract configuration. The choice made by the child, as well as the position and order of the stimuli chosen, was recorded. Additionally, the relationship between the number of correct matches made by the child and teacher ratings of the child's creativity was examined. When the data for the pairs of stimuli were grouped into positive and negative affective categories, the difference between the number of correct responses in the two categories reached statistical significance at the .05 level. The creativity scores did not correlate with the correct matching score. (Author/RH)

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Physiognomic Perception of Positive and Negative Stimuli Among Pre-School Children

Michael Greenauer and Martin S. Lindauer

State University of New York, College at Brockport

Physiognomic perception refers to the attribution of expressive qualities to a stimulus in the same direct and immediate way its literal properties are perceived (Arnheim, 1965; Bodman, Mincher, Williams, & Lindauer, 1979; Kohler, 1947; Lindauer, 1970; Werner, 1955). For example, a line is not only a certain color, size, and orientation (e.g., black, long, and tilted) -- it is also physiognomically "happy." Werner (1948; Werner & Kaplan, 1963) adds that physiognomic perception follows a developmental course (Wallach & Kogan, 1965). Younger children are more likely to attribute physiognomic properties to stimuli than older children and adults. Schlesinger (1979) found this developmental pattern for 4-, 6-, and 8-year olds.

A preoccupation with age differences, however, tends to overlook variations in physiognomic perception as a function of the stimuli used. For example, would stick figures portraying different emotions like sadness and happiness be seen by children as equivalent to meaningless lines which are physiognomically representative of "sadness" and "happiness"? Consensual matches between apparently unrelated stimuli, in this case between stimuli literally and physiognomically representative of different emotions, was investigated among five- to six-year old children. This is about the earliest age at which physiognomic perception is likely to be present (Werner & Kaplan, 1963) and measurable by a matching technique.

Method

The cooperation of an urban day care center was obtained.[1] Several weeks were spent by one of the investigators (M. G.) in gaining the confidence of the children and in becoming aware of and sensitive to their capabilities (e.g., in understanding instructions, in their span of attention, and in their interest in certain kinds of tasks over others). Classes were attended for several hours a week, at which time observations were made of the children's behavior. In addition to observing, the children were also engaged by the experimenter in both individual and group activities. At least five different types of tasks and materials were explored, from which the eventual procedures and stimuli for this study were developed.

Of the 22 children available, 18 participated in the study. (Parental permission was not received from one parent; and three children were excluded because they were older than the rest of the group.) There were

[1]The authors wish to thank Mrs. Jane Hulberg and her staff, and the participating children and their parents, for their understanding, patience, and cooperation. We are also grateful to Ms. Doris Carey for her imaginative drawings of the stick figures.

eight boys and 10 girls in the study (M ages = 66.63 and 67.20 months, respectively; range = 63 - 72 months; overall M = 66.94 months.) The children were about equally divided by race; there were also a few children of Hispanic background. In terms of income, about a fourth were judged as poor, with the remainder middle-class. The children attended two classes, each taught by two teachers.

The stimuli were taken from a standardized test of physiognomy (Stein, 1975).[2] A neutral stimulus, such as a line, is rated on a six-point scale either literally (a "line") or physiognomically ("sad"). Nine relatively meaningless or nonsense stimuli were chosen. They physiognomically represented eight emotions (sadness was represented by two stimuli). Nine stick figures portraying these emotions were drawn by an artist. The nonsense and affective stick figures, appropriately matched, are shown in Figure 1. Seven college students, acting as judges and unfamiliar with the purpose of the study, were told to assign the stick figures into groupings that were "similar to one another." They unanimously put them into four groups that were labelled as follows: (1) sadness (two stimuli), (2) excitement, happiness, and peacefulness; (3) upset, cruelty, and rage; and (4) desire.

Each child was individually tested in an isolated room. Three stimuli at a time were shown. Two stick figures representing two emotions flanked a nonsense figure which represented the emotion portrayed by one of the two stick figures. The inappropriate stick figure was randomly chosen, and the position of the correct stick figure was alternated on each trial. The child's task was to identify the stick figure which could have drawn the nonsense figure. "Which of these two people [pointing to the two stick figures] do you think drew the picture in the middle?" The choice made, whether correct or not, and the position and order of those chosen, were recorded.

The relationship between the child's physiognomic score (the number of correct matches) and creativity was also examined. A positive correlation was expected, since both physiognomy and creativity share a common "primitive" or spontaneous quality (Dember & Warm, 1979, pp. 432-433). The children's creativity was judged on a questionnaire by their teachers. Three types of questions (pertaining to drawing, building, and verbalizing) were pretested and edited on the basis of comments by several teachers (other than the four who judged the children's creativity). An example follows: "How imaginative are the child's comments and questions in class?: Very imaginative, above average, average, below average, or not very imaginative?" The option chosen was converted into a five-point scale (where

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[2]Permission of the author and Human Sciences Press are gratefully acknowledged.

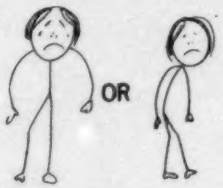
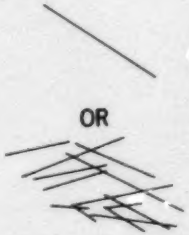
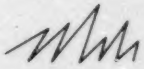
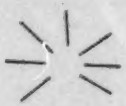
STICK FIGURE	NONSENSE STIMULUS	EMOTION	STICK FIGURE	NONSENSE STIMULUS	EMOTION
		Peacefulness			Sadness
		Happiness			Upset
		Excitement			Cruelty
		Desire			Rage

Fig. 1. Emotions and their referents: Literal stick figures and physiognomic nonsense stimuli.

5 = a creative response). (The other questions referred to expressiveness in the use of form, color, and space in drawing, and the uniqueness of the choices made in selecting shapes and forms in building things.) Two children's scores were excluded because their teacher's ratings were extremely divergent from one another.

Results

The pairs of nonsense and stick figures representing four positive emotions were more often correctly matched than the five pairs of negative stimuli. Thus, sets of stimuli pertaining to excitement, happiness, peacefulness, and desire were successfully matched by 72%, 67%, 61%, and 61% of the children, respectively. On the other hand, the two pairs representing sadness, and the rage, cruelty, and upset pairs were correctly matched by 56%, 39%, 56%, 50%, and 28% of the group respectively. These findings, however, did not reach acceptable statistical significance levels (Cochran's Q (8) = 12.47, $p < .20$). However, when the data for the nine pairs were grouped into positive and negative affective categories (as listed above, respectively), the difference between the number of correct responses in the two categories did achieve statistical significance (F (1, 16) = 5.94, $p < .05$). (Similar results were found when desire, whose affective status as positive or negative is ambiguous, was excluded.) There was no correlation between the number of correct positive and negative matches made by each child (r (16) = .30, $p > .05$), another indication of the independence of the two types of judgments from each other. The superiority of the positive over the negative pairings may be even stronger than it appears. There were more negative than positive pairs of stimuli (five vs four; and the emotion "sad" was represented twice). Thus, there could have been a greater number of chance successes for the negative pairs of emotions because of the greater opportunity for guessing. The relatively low rate of correct matches overall (never exceeding 72%) may be the result of using stimuli standardized on an adult population.

These results were not affected by the order of presentation (whether the pair was presented early or late in the sequence) or the sex of the children (Fs < 1). The creativity score, overall or for each question, did not correlate with physiognomy, i.e., the correct matching score (r (16) $\leq .2^{4}$, $p > .05$). The failure to find a correlation may be the result of using two diverse measures, a play-like physiognomy task and a judgment about creativity made by an outside observer.

Discussion

Five-to six-year olds were able to fairly successfully match stick figures portraying emotions with nonsense stimuli physiognomically representative of these emotions. However, these matches were mainly found for

the positive emotions (happiness, peacefulness, excitement, and desire). Negative stick figures (portraying rage, cruelty, upset, and sadness) were not as successfully matched with their corresponding physiognomic stimuli.

These results, at least in part, attest to the presence of physiognomic perception at a fairly early age. Certain stimuli, even though without any obvious meaning or direct referent, are intrinsically expressive of particular emotional qualities. For example, a diagonal line sloping upwards to the right (but not to the left), "fits" a happy person, a wavy line is "naturally" peaceful, and a star-burst pattern "demands" to be seen as excitement. On the other hand, a similar pattern of congruence was not found between negative emotions and their line referents.

The capacity to assign positive but not negative emotions to nonsense stimuli is not simply a matter of learning (Osgood, 1960). It hardly seems likely that a five- or six-year old would have learned the conventional meanings of upward lines (and other positive patterns), while at the same time not have also learned the stereotyped meanings of downward lines (and other negative patterns). It is possible that positive patterns are more familiar because they are more frequently found in a child's environment, e.g., smiling faces have upturned mouths. On the other hand, positive affect may carry a stronger biological necessity, in evolutionary terms, than negative judgments. A similar emphasis on positive over negative emotions has also been found in various forms of literature (but not in psychology; Lindauer, 1968).

Aside from these speculations, what seems fairly clear is that physiognomic perception -- the perception of non-literal and expressive properties -- is present to an appreciable degree in young children (cf. Dor-Shav, 1977). Failure to find physiognomic perception may be due to the use of stimuli minimally capable of arousing such effects (e.g., neutral, non-emotional, or negative stimuli). The distinction between the effectiveness of positive and negative emotions suggests that other stimulus attributes may also play a role in disclosing physiognomic perception. One has to consider such things as the kind of shapes used (e.g., whether nonsense or meaningful), and the quality of their colors (e.g., whether "warm" or "cold"; see Hevner, 1935).

Since age trends in physiognomic perception are of considerable theoretical importance (Werner & Kaplan, 1963), it would be valuable to know if children older than the five- and six-year olds used in this study would respond similarly to positive and negative stimuli. The significance of this study lies in affirming, in a developmental context, the essential criterion of physiognomy, namely, its stimulus dimension (Köhler, 1947).

References

Arnheim, R. Art and visual perception. Berkeley, Ca.: University of California Press, 1965.

Bodman, P. L., Mincher, M., Williams, C., & Lindauer, M. S. What's in a name? Evaluations of literary names in context and in isolation. Poetics, 1979, 8, 491-496.

Dember, W. N., & Warm, J. S. Psychology of perception. 2nd ed. N.Y.: Holt, Rinehart & Winston, 1979.

Dor-Shav, N. K. Physiognomic form perception: Mature or immature? Perceptual and Motor Skills, 1977, 44, 475-478.

Hevner, K. Experimental studies of the affective value of color and lines. Journal of Applied Psychology, 1935, 19, 385-398.

Köhler, W. Gestalt psychology. N.Y.: Liveright, 1947.

Lindauer, M. S. Pleasant and unpleasant emotions in literature: A comparison with the affective tone of psychology. Journal of Psychology, 1968, 70, 55-67.

Lindauer, M. S. Physiognomic properties of abstract art and titles. Proceedings 78th Annual Convention APA, 1970, 5, 493-494.

Osgood, C. E. The cross-cultural generality of visual-verbal synesthetic tendencies. Behavioral Science, 1960, 5, 146-149.

Schlesinger, L. B. Physiognomic sensitivity: its development and modification. Journal of Genetic Psychology, 1979, 134, 107-123.

Stein, M. I. The physiognomic cue test: Manual. N.Y.: Behavioral Publications, 1975.

Wallach, M. A., & Kogan, N. Modes of thought in young children. N.Y.: Holt, Rinehart & Winston, 1965.

Werner, H. Comparative psychology of mental development. rev. ed. N.Y.: International Universities Press, 1948.

Werner, H. (Ed.) On expressive behavior. Worcester, Mass.: Clark University, 1955.

Werner, H., & Kaplan, R. Symbol formation. N.Y.: Wiley, 1963.